



# R. Lavin & Sons, Inc.

*Refiners and Smelters of Nonferrous Metals*

July 19, 1996

Mr. Gino Bruni  
IEPA  
Division of Land Pollution Control  
1701 South First Avenue  
Maywood, Illinois 60153

RECEIVED  
ENVIRONMENTAL PROTECTION AGENCY

JUL 22 1996

BUREAU OF LAND POLLUTION CONTROL  
STATE OF ILLINOIS

Dear Gino,

Enclosed please find the following information:

1. Letter dated January 14, 1983 from Mr. Charles Barker to Mr. Rama K. Chaturvedi, P.E., Manager RCRA Unit Permit Section Division of Land Pollution Control, explaining the production and use of cupola slag.
2. Letter dated February 15, 1983 from Mr. Charles Barker to Mr. Scott Phillips, IEPA, explaining the use of "cupola slag".
3. Letter dated March 11, 1983 from Rama Chaturvedi, P.E., Manager RCRA Unit Permit Section Division of Land Pollution Control, to Mr. Charles Barker, stating that the use of cupola slag as trench backfill is not an activity requiring a special waste permit.
4. TCLP and EPTOX results

a. 11/8/82	E-A Enviro Analysts	EPTOX
b. 1/19/98	CBC	EPTOX
c. 2/23/89	CBC	TCLP
d. 6/15/89	R. Lavin	EPTOX
e. 3/26/90	R. Lavin	EPTOX
5. Various letters from the early 1970's supporting the use of this slag as trench backfill.
6. Most recent IDOT report, "Aggregate Gradation Report"

Production Facility: 2028 Sheridan Road North Chicago, Illinois 60064

Phone: 847-689-4300 Fax: 847-689-0513

*Corporate Office: Chicago, Illinois*

US EPA RECORDS CENTER REGION 5




400202

Mr. Gino Bruni  
July 19, 1996  
page 2

This material has passed TCLP and EPTOX and has been beneficially used as a substitute for other natural resources on construction projects for decades, many of which were probably from the Illinois Department of Transportation. As a result, "Cupola Slag" has never been considered a solid waste.

Sincerely,

A handwritten signature in cursive script, appearing to read "George M. Lennon".

George M. Lennon

c: Ray Reott  
Arnold Kerstein  
Dennis Caldwell

LAW OFFICES

JENNER & BLOCK

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

ONE IBM PLAZA

CHICAGO, ILLINOIS 60611

TELEPHONE (312) 222-9350

TWX 910-221-5409

TELEX 270469

CABLE JENBLOCK

CHARLES L. BARKER

January 14, 1983

Rama K. Chaturvedi, P.E., Manager  
RCRA Unit  
Permit Section  
Division of Land Pollution Control  
Illinois Environmental Protection  
Agency  
2200 Churchill Road  
Springfield, Illinois 62706

Dear Mr. Chaturvedi:

I regret that you were ill and could not meet with Dennis Hatfield and me on January 12, 1983 as we had planned. Messrs. Cavanagh and Phillips conferred with us on your behalf about the cupola slag produced by North Chicago Refiners and Smelters, a division of R. Lavin & Sons, Inc. ("NCRS"). At their recommendation, I am writing to request that you determine that the cupola slag is not a waste as defined in 35 Ill. Adm. Code §721.102.

NCRS produces cupola slag when it recovers metal from nonferrous slag in its cupola furnace. An operator hardens the slag, using a jet of cold water, into granules having the consistency of glass. Virtually all of the granules are one-eighth of an inch in diameter or smaller. As you have already determined in your letters to NCRS of June 7 and December 6, 1982, the slag is neither a hazardous nor a special waste, as those terms are defined in Illinois law and regulations, because it does not pose a present or potential threat to human health or the environment. According to its records dating back to 1974, and its plant manager, Samuel Levin, who has worked for NCRS since 1950, NCRS has never discarded its cupola slag. NCRS has always supplied J. R. Myers Co., Inc. ("Myers") and Myers' predecessor companies with the cupola slag. Myers has used most of the cupola slag as trench backfill and bedding in its construction business involving municipal and state construction projects. Myers has also used

Rama K. Chaturvedi, P.E.  
January 11, 1983  
Page Two

a relatively small amount of cupola slag as fill under the concrete floors of several warehouses and an office building which it constructed for its own use. I have enclosed a copy of correspondence from Myers in which its secretary-treasurer confirms these uses.

On March 18, 1980, the Illinois Department of Transportation ("IDOT") conducted its most recent inspection of the cupola slag, and approved it for use as trench backfill and bedding. I have enclosed a copy of the IDOT computer printout showing that the agency has approved the cupola slag for these uses. This printout was forwarded to me by IDOT District Materials Engineer, Milton J. Tauchen.

Because questions have been raised about the appropriate classification of the cupola slag, since you first contacted NCRS, NCRS has temporarily stored all the slag it has produced on its own premises. However, Myers stands ready and is anxious to pay NCRS for the cupola slag and resume using the slag as it has in the past. Myers' plans are, of course, subject to the IEPA's determination that the slag is not a waste. For obvious economic reasons, and because it is rapidly running out of storage space, NCRS also wants to have the question of whether the cupola slag is a waste resolved as soon as possible.

The physical properties and use of the cupola slag establish that it does not fall within any of the four categories of material defined as a "solid waste" in 35 Ill. Adm. Code §721.102. The cupola slag is not "garbage" as the Pollution Control Board ("PCB") defines that term in Chapter 9 Special Waste Hauling Regulations Rule 103, because its production does not involve food or produce. The slag is not "sludge" as that term is defined in 35 Ill. Adm. Code §720.110, because its production does not involve water treatment or air pollution control. Finally, the slag is neither "refuse" nor an "other waste material" as those terms are defined in Chapter 9 Special Waste Hauling Regulations, Rule 103 and 35 Ill. Adm. Code §721.102, respectively, because NCRS never has or would "discard" it within the meaning of §721.102(b), (c) and (d). Instead, NCRS has supplied the slag to Myers and Myers has in turn charged its customers by the cubic yard for the use of cupola slag as trench backfill and bedding.

Rama K. Chaturvedi, P.E.  
January 14, 1983  
Page Three

Based on the foregoing facts, the PCB rules and the IEPA regulations, NCRS believes that their cupola slag is not a waste. Therefore, we respectfully request that you confirm NCRS' belief at your earliest convenience. Thank you for your consideration.

Sincerely yours,

  
Charles L. Barker

Enclosures

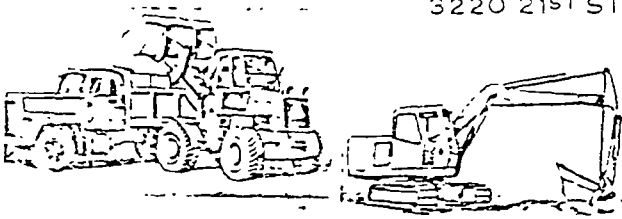
CLB:as

cc: Thomas E. Cavanagh, Jr.  
Samuel Levin

# J. R. MYERS CO., INC.

UNDERGROUND GENERAL CONTRACTORS

3220 21ST STREET • ZION, ILLINOIS 60099 • TEL. 312 872-2910



16 September 1982

North Chicago Refiners & Smelters  
2028 South Sheridan Road  
North Chicago, IL 60064

Attn: Mr. Walter Schmidt

Gentlemen:

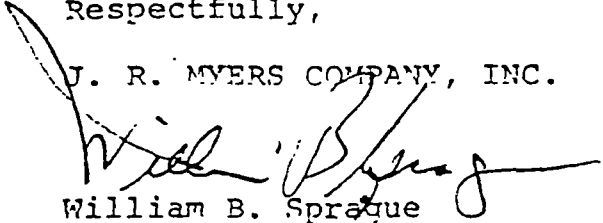
In reply to your questions regarding our use of "slag", we have used it for trench backfill material in our trenches under pavements, sidewalks, driveways, curb & gutter. At times we have used it for fill material under concrete floors in buildings.

This firm has had the use of this material since 1973. Prior to that time, E. A. Meyer Construction Co. used this material for the same purpose. They used it for some twenty-five years that we know of, as Mr. J. R. Myers and Mr. W. B. Sprague of this firm worked for them at the time.

If it is possible, we would use it in the future for the same purpose; trench backfill for our sewer and watermain trenches. The trenches probably average about four feet in width and about ~~ten~~ feet in depth.

Respectfully,

J. R. MYERS COMPANY, INC.

  
William B. Sprague  
Secy-Treas.

We enclose a copy of correspondence with the James Anderson Company in regards to use of "slag" as trench backfill.

JAMES ANDERSON COMPANY  
ENGINEERS AND SURVEYORS  
596 NORTH WESTERN AVENUE  
LAKE FOREST, ILLINOIS 60045

312-234-0039

July 20, 1973

J. R. Myers Company  
2301 Gideon Avenue  
Zion, Illinois, 60099

Attention: Mr. William B. Sprague, Secretary

Re: Order No. 11317

Gentlemen:

We have made a study of the Novak, Dempsey and Associates, Inc., March 31, 1970, report letter made for E. A. Meyer Construction and received at our office on July 11, 1973, on the suitability of slag as a trench backfilling material. In most respects the analyzed material is excellent for such use. There are two physical characteristics of the material for which we would like further written information from you.

- (1) What is the maximum in place saturated unit weight of the slag that would be furnished in pounds per cubic foot? We note that the specific gravity of solids for slag is about 40 per cent greater than a typical granular backfill material.
- (2) Will it be possible to utilize a temporary two inch thick cold patch pavement over this slag material without excessive displacement of the slag under heavy wheel loads?

Please furnish us your written answers to the foregoing questions. If your answer to the second question is "yes", this slag material will be allowable for trench backfill purposes up to pipe depths related to the certified saturated unit weight of slag. We will advise you of the maximum allowable trench depth where slag may be used for backfilling purposes.

Cordially yours,

JAMES ANDERSON COMPANY

By [Signature]  
Secretary

JFA/vu

carbon copy: The City of Lake Forest, 110 East Laurel Avenue, Lake Forest

JAMES ANDERSON COMPANY  
ENGINEERS AND SURVEYORS

596 NORTH WESTERN AVENUE  
LAKE FOREST, ILLINOIS, 60045

312-234-0039

October 5, 1973

J. R. Myers Company  
2301 Gideon Avenue  
Zion, Illinois, 60099

Attention: Mr. William D. Sprague, Secretary-Treasurer

Re: Order No. 11317

Gentlemen:

In regard to the LeRoy Burton Petite Estates and vicinity sanitary sewerage improvement now under construction by your firm please be advised that we hereby approve of the use of Clow Corporation no bell extra strength vitrified clay pipe in all situations on the aforementioned project where extra strength clay pipe is specified. It is understood that said pipe and attached joints conform in all respects to the minimum requirements of the American Society for Testing and Materials Designations C200-69; C700-71T extra strength, C425-71, and D1784-69, Class 12454-B. Said pipe also is understood to conform to all applicable provisions for National Clay Pipe Institute Designation ER4-67 extra strength pipe.

We also approve of the use of non-swelling slag as a granular backfilling material on this project in all installations of extra strength clay pipe where the depth from finished pavement surface to the top of the pipe does not exceed 15 feet. Slag, of course, may be used as a granular backfilling material in any trench beneath pavement in which ductile cast iron pipe is specified regardless of the trench depth. Since there is no case on this project where a depth greater than the aforementioned 15 feet will be encountered, slag may be used in any situation where granular backfill is required. It is further understood that there will be no change in payment to be made to the Contractor due to the use of said slag or on account of the use of the aforementioned no bell clay pipe.

Cordially yours,

JAMES ANDERSON COMPANY

By

*James D. Anderson*  
Secretary

JEA/vu

carbon copy:

The City of Lake Forest  
110 East Laurel Avenue  
Lake Forest, Illinois

## TEST AND INSPECTION IDENT

TEST ID NO: 80T4886A

LAST MODIFIED: 032480

INSPECTOR NO: 343426759

NAME: HEMB

LARRY

AGENCY: 91

DATE SAMPLED: 031880

SEQUENCE NO: 001

TYPE OF INSP: PRO

ORIGINAL IDENT:

NEXT IDENT:

LAST IDENT:

TOTAL SAMPLES: 01

PRODUCER NO: 1440-01 NAME: NORTH CHICAGO REFIN. LOC: NORTH CHICAGO

IL

SUPPLIER NO:

NAME:

LOC:

MATERIAL CODE: 016FA06

NAME: TRENCH BFILL &amp; BED

DESCRIPTION:

INSPECTED QTY:

UNITS: TONS

NO. ITEMS:

SPEC TITLE:

ARTICLE:

EFFECTIVE DATE:

SAMPLED FROM:

COPY:

RESPONSIBLE LOC: 91

LAB: FF

NAME:

DATE RECEIVED:

START DATE:

COMPLETE DATE:

TEST RESULTS: APPR

AUTHORIZED BY:

REMARKS:

MESSAGE: MULT PAGES PLEASE PRESS-PA2 KEY

RECEIVED

NOV 23 1982

CHARLES BARKER

TEST ID NO. 8014886A

~~SOURCE:~~

3	2.5	2	1.75	1.5	1	3/4	5/8	1/2	3/8	4	16	50	200	<200	P.I. RESULTS
		1	3/8	4	8	10	16	30	40	50	80	100	200		
		100		99							3	10			APPR

AF'FR

Material was approved on basis of gradation since quality is not required for trench backfill.

LAW OFFICES

**J E N N E R   &   B L O C K**

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

ONE IBM PLAZA

CHICAGO, ILLINOIS 60611

TELEPHONE (312) 222-9350

TWX 910-221-5409

TELEX 270469

CABLE JENBLOCK

CHARLES L. BARKER

February 15, 1983

Mr. Scott Phillips  
Illinois Environmental  
Protection Agency  
2200 Churchill Road  
Springfield, Illinois 62706

Dear Mr. Phillips:

Pursuant to our telephone conversation of February 3, 1983, I am writing to supplement my letter to Rama Chaturvedi of January 14, 1983. That letter concerns the cupola slag produced by North Chicago Refiners and Smelters ("NCRS"), a division of R. Lavin & Sons, Inc.

As you know, NCRS has asked the Illinois Environmental Protection Agency to find that its cupola slag is not a "solid waste" as that term is defined in 35 Ill. Adm. Code §721.102. In support of that request, NCRS stated that it has never "discarded" its cupola slag as that term is defined in §721.102. In this letter I supplement the statement of NCRS with further information about the disposition of cupola slag in the state of Illinois.

R. Lavin & Sons, Inc. belongs to the Brass and Bronze Institute, one of the major trade associations for nonferrous metal smelters. R. Lavin & Sons, Inc. is also one of the largest brass and bronze smelters in the midwest. Consequently, R. Lavin & Sons, Inc. believes it is familiar with all the brass and bronze smelters in Illinois.

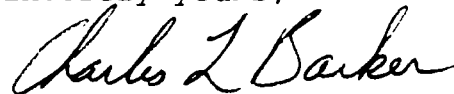
Based on its knowledge of the brass and bronze smelting industry, R. Lavin & Sons, Inc. believes that no other smelter of brass and bronze in Illinois produces cupola slag in the same physical state as that produced by NCRS. NCRS is the only brass and bronze smelter which produces pellet size cupola slag with a ceramic-like consistency. Furthermore, because of its unique physical characteristics,

Mr. Scott Phillips  
February 15, 1983  
Page Two

the cupola slag produced by NCRS is the only slag produced by a brass and bronze smelter in Illinois which is suitable for use as trench backfill.

In light of these facts, NCRS believes that no cupola slag produced in Illinois with physical characteristics making it suitable for use as trench backfill has ever been discarded. Therefore, North Chicago Refiners and Smelters respectfully requests the Illinois Environmental Protection Agency to find that its cupola slag is not a "solid waste" as that term is defined in 35 Ill. Adm. Code §721.102.

Sincerely yours,

A handwritten signature in cursive script, reading "Charles L. Barker".

Charles L. Barker

CLB:mar

cc: Rama Chaturvedi  
Thomas E. Cavanagh, Jr.  
Dennis Hatfield  
Samuel Levin



217/782-5556

Refer to: 0971250010 -- Lake County  
North Chicago/North Chicago Refiners and Smelters

March 11, 1983

Charles L. Barker  
Jenner & Block  
One IBM Plaza  
Chicago, IL 60611

Dear Mr. Barker:

Pursuant to your request on behalf of your client, North Chicago Refiners and Smelters (NCRS), a division of R. Lavin & Sons, Inc., the Agency has reconsidered its position regarding the use of cupola slag meeting the specifications identified in the analysis provided in your letter dated January 14, 1983 for purposes of trench backfill. Although the Agency does not agree with the arguments presented in your letter to Scott Phillips dated February 15, 1983, the Agency is of the opinion that the use of this particular cupola slag for purposes of trench backfill is not an activity which requires a permit under Illinois Pollution Control Board Rules & Regulations Chapter 7: Solid Waste.

Should you have any further questions, please feel free to contact me.

Sincerely,

*Rama K. Chaturvedi*

Rama K. Chaturvedi, P.E., Manager  
RCRA Unit  
Permit Section  
Division of Land Pollution Control

RKC:mks:12/9

cc: Bob Kuykendall  
Scott Phillips  
Tom Cavanagh  
Terry Ayers  
Ken Bechely  
Major Hearn  
Division File

EPA TOXICITY TEST

SAMPLE #: N.A.

MATERIAL: Cupola Slag Pile (3-26-90)

TOTAL SAMPLE WEIGHT USED: 50 g

TOTAL FINAL SOLUTION VOL: 1000 ml

ANALYTE	MAXIMUM CONC. ALLOWED (ppm)	FINAL SOL'N. CONC. (ppm)	ANALYTICAL METHOD
As	5.0	.14	ICP-ES
Ba	100.0	.09	ICP-ES
Cd	1.0	.01	ICP-ES
Cr	5.0	<.01	ICP-ES
Pb	5.0	.49	ICP-ES
Hg	0.2	<.001	AA-Cold Vapor
Se	1.0	.44	ICP-ES
Ag	5.0	<.01	ICP-ES
B	---	1.36	ICP-ES

SAMPLE PREPARER: Steven C. Janowski DATE: 4/6/90

SAMPLE ANALYST: Steven C. Janowski DATE: 4/12/90

Sample prepared in accordance with:  
Federal Register Vol. 43, No.243 - Monday, Dec. 18, 1978

EPA TOXICITY TEST

SAMPLE #: No Number

MATERIAL: Cupola Slag

TOTAL SAMPLE WEIGHT USED: 12.5 g

TOTAL FINAL SOLUTION VOL: 250 ml

ANALYTE	MAXIMUM CONC. ALLOWED (ppm)	FINAL SOL'N. CONC. (ppm)	ANALYTICAL METHOD
As	5.0	<.01	ICP-ES
Ba	100.0	.09	ICP-ES
Cd	1.0	.04	ICP-ES
Cr	5.0	<.01	ICP-ES
Pb	5.0	2.17	ICP-ES
Hg	0.2	<.001	AA-Cold Vapor
Se	1.0	<.01	ICP-ES
Ag	5.0	<.01	ICP-ES

SAMPLE PREPARER:

Jonathan R. Helton

DATE: 6-15-89

SAMPLE ANALYST:

Steven A. Janowski

DATE: 6/16/89

Sample prepared in accordance with:

Federal Register Vol. 43, No.243 - Monday, Dec. 18, 1978

NOTE: .2712% Boron in ORIGINAL SAMPLE

EQUIVALENT .0108 % Boron LEACHED OUT OF TOXICITY TEST SAMPLE

sj 4/20/89

$.2712\% = .002712 = 2712 \text{ PPM}$

$.0108\% = .000108 = 108 \text{ PPM}$



# ENVIRONMENTAL SERVICES

CHEM-BIO CORPORATION  
140 EAST RYAN, RD OAK CREEK, WI 53154-4599 (414) 764-7005

03/23/89

LABORATORY REPORT

PAGE 1

N218 8432458 W70

NORTH CHICAGO REFINERS & SMELTERS  
DIV OF R. LAVIN SONS 2028 SHERIDAN ROAD  
NORTH CHICAGO, IL 60064  
ATTN: GEORGE LENNON

SAMPLE 89060-N04238 CUPOLA SLAG (NO DATE GIVEN)  
DATE COLLECTED 03/01/89 DATE RECEIVED 03/01/89

TEST NAME	RESULT	UNITS
ARSENIC - TCLP	0.048	MG/L
BARIUM - TCLP	1.0	MG/L
CADMIUM - TCLP	0.07	MG/L
CHROMIUM - TCLP	0.13	MG/L
LEAD - TCLP	2.3	MG/L
MERCURY - TCLP	0.0006	MG/L
SELENIUM - TCLP	<0.02	MG/L
SILVER - TCLP	<0.01	MG/L
TCLP EXTRACTION - METALS	COMPLETE	MG/L
COPPER - TCLP	11	MG/L
NICKEL - TCLP	1.2	MG/L
ZINC - TCLP	280	MG/L
ANTIMONY - TCLP	<0.3	MG/L
ALUMINUM-TCLP	35	MG/L
MANGANESE-TCLP	22	MG/L

EMC  
ENVIRONMENTAL MANAGEMENT CONTROL, INC.

PROMULGATED SPEC  
(NOT APPROVED YET)  
PPM

Ba - 100  
Pb - 5.0  
Ni -  
Zn - 280

1141 COUNTY RD #51 ■ GENOA, OHIO 43430  
419-855-8378

PLEASE CONTACT OUR CLIENT SERVICE DEPARTMENT WITH QUESTIONS. REMAINING WASTE SAMPLES WILL BE RETURNED 6 WEEKS FROM THE RECEIVING DATE OF SAMPLE. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT. WI DNR LAB CERTIFICATION #241283020/A.I.H.A. ACCREDITED.

N/T = NOT TESTED

N/A = NOT APPLICABLE

APPROVAL 

FAX #414-764-0486

WI DNR LAB CERTIFICATION #241283020

1-800-365-3840



**ERM-North Central, Inc.**  
Environmental Resources Management

102 Wilmot Road • Suite 300 • Deerfield, Illinois 60015 ☎ (312) 940-7200

February 1, 1989

Mr. George Lennon  
North Chicago Refiners & Smelters  
Division of R. Lavin & Sons, Inc.  
2028 South Sheridan Road  
North Chicago, Illinois 60064

RE: Analysis of Cupola Slag


Dear George:

We have finally received the inorganic constituent analysis of the cupola slag from the laboratory! Attached are the results. Of particular interest are the EP-Toxicity results which show that the slag is not a hazardous waste.

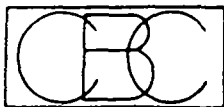
Again, we are sorry for the delay.

Very truly yours,

ERM-NORTH CENTRAL, INC.

  
Kenneth A. Walanski, P.E.  
Senior Project Manager

jls



CHEM-BIO CORPORATION

140 EAST RYAN ROAD OAK CREEK, WI 53154-4599 (414) 764-7005

**ENVIRONMENTAL  
SERVICES****RECEIVED**  
JAN 21 1998

01/19/89

LABORATORY REPORT ERM-NORTH CENTRAL, IL PAGE 1

E020 8430197 W81  
KP/\* / / /ERM-NORTH CENTRAL, INC.  
102 WILMOTT  
DEERFIELD , IL 60015  
ATTN: KEN WALANSKISAMPLE 88354-E04048 WASTE / NORTH CHICAGO REFINERS AND SMELTERS CUPOLA  
SLAG

TEST NAME	RESULT	UNITS	EP TOXICITY	EP LIMIT	HAZ.CODE
ALUMINUM - TOTAL	7600	PPM			
ANTIMONY - TOTAL	51	PPM			
BERYLLIUM - TOTAL	21	PPM			
CALCIUM - TOTAL	7500	PPM			
COBALT - TOTAL	7.1	PPM			
MAGNESIUM - TOTAL	4000	PPM			
POTASSIUM - TOTAL	400	PPM			
SODIUM - TOTAL	11000	PPM			
BARIUM - TOTAL	80	PPM	0.33	MG/L	100.0
CADMIUM - TOTAL	2.2	PPM	0.09	MG/L	1.0
CHROMIUM - TOTAL	34	PPM	0.10	MG/L	5.0
LEAD - TOTAL	190	PPM	<0.5	MG/L	5.0
SILVER - TOTAL	0.2	PPM	<0.01	MG/L	5.0
ARSENIC - TOTAL	0.095	PPM	0.002	MG/L	5.0
SELENIUM - TOTAL	0.51	PPM	0.003	MG/L	1.0
MERCURY - TOTAL	<0.010	PPM	<0.0004	MG/L	0.2
TOTAL CYANIDE	<10	PPM			
THALLIUM - TOTAL	<10	PPM			
VANADIUM - TOTAL	4.2	PPM			
COPPER - TOTAL	2100	PPM			
NICKEL - TOTAL	100	PPM			
ZINC - TOTAL	17000	PPM			
IRON - TOTAL	26000	PPM			
MANGANESE - TOTAL	1300	PPM			

METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, 1979, EPA-600/4-79-020.

TEST METHODS FOR EVALUATING SOLID WASTE, PHYSICAL/CHEMICAL METHODS, 1982, EPA SW846.

PLEASE CONTACT OUR CLIENT SERVICE DEPARTMENT WITH QUESTIONS. REMAINING WASTE SAMPLES WILL  
BE RETURNED 6 WEEKS FROM THE RECEIVING DATE OF SAMPLE. WATER SAMPLES ARE DISPOSED OF 30  
DAYS AFTER RECEIPT. WI DNR LAB CERTIFICATION #241283020/A.I.H.A. ACCREDITED.

N/T = NOT TESTED

N/A = NOT APPLICABLE

APPROVAL

1-847-365-2840



ENVIRO-ANALYSTS, INC.

1300 S Green Bay Rd  
Racine, Wisconsin 53406

LABORATORY REPORT  
WASTE WATER EXAMINATION

Report No 3218

To Gary Freeman  
BFI

Subject BFI Waste Generator Profile

Date 11/8/82

P O # Freeman

Sample 10/28/82

(See reverse for compatibility results)

1. Generator name: BFI
2. Waste description: Cupola Slag
3. Sample date: 10/28/82
4. Sample #/code:

Chemical Analysis

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| 1. pH 8.58                           | 6. Cyanide, total 1.75 mg/kg      |
| 2. Flashpoint >210°F, does not flash | 7. Cyanide, reactive 0.05 mg/kg   |
| 3. <u>Alkalinity</u> Acidity 300.0   | 8. Sulfide, total < 0.25 mg/kg    |
| 4. Density 1.90                      | 9. Sulfide, reactive < 0.25 mg/kg |
| 5. Total Solids (%) 100%             | 10. Phenol < 0.25 mg/kg           |

EP Toxicity Evaluation: Federal Register, Sec. 261.

- |                       |                                       |
|-----------------------|---------------------------------------|
| 1. Silver <0.01 mg/l  | 5. Mercury < 0.01 mg/l                |
| 2. Arsenic <0.01 mg/l | 6. Lead < 0.01 mg/l                   |
| 3. Barium 0.12 mg/l   | 7. Selenium < 0.01 mg/l               |
| 4. Cadmium <0.01 mg/l | 8. Chromium <sup>+6</sup> < 0.01 mg/l |

Additional information

- |                                |                               |
|--------------------------------|-------------------------------|
| 1. % oil content -             | 5. Color dark gray            |
| 2. BTU value -                 | 6. Solvent content % < 0.01%  |
| 3. Ash content 100%            | 7. Phase: liquid <u>solid</u> |
| 4. Heavy metals specify: _____ | 8. Miscellaneous:             |

1. No  $\mu$  liquid
2. No reactivity for air or water
3. Reactivity Acid: No reaction noted
4. Reactivity Base: No reaction noted